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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,635	08/31/2001	Peiguang Zhou	KCC-16,631	9238

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EXAMINER

SALVATORE, LYNDA

ART UNIT	PAPER NUMBER
1771	7

DATE MAILED: 08/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/944,635	<b>Applicant(s)</b> ZHOU ET AL.
<b>Examiner</b>	<b>Art Unit</b>	
Lynda M Salvatore	1771	

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 08 January 2002 .

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-76 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-76 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)  The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a)  The translation of the foreign language provisional application has been received.

15)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6 .

4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_ .  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 21 is objected to because of the following informalities: Line 8 recites “isotactic poly”. Does the Applicant mean to recite polypropylene? Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 42 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claims 42 and 43 are indefinite because the recitations of a “strand” do not constitute a non-woven. The Examiner suggests using the claim language recited in claim 64 directed to further limiting the *substrate*.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-17,20-36, 42,43,45-62,64,66, and 68-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang, US 6,329,468 in view of Hall, Jr., et al., US 3,370,106

The patent issued to Wang discloses the use of a flexible polyolefin-based hot-melt adhesive composition suitable in a variety of end uses such as attaching elastic members to non-woven substrates in disposable garments as well as bonding propylene based films (Abstract). Wang teaches adhesively bonding multiple layers of sheet material together to form a diaper (Figures 1 and 2, Column 13, lines 28-29). Wang further teaches that the flexible polyolefin hot melt adhesive may be used to bond adjacent substrate layers (Column 13, lines 40-45). In one embodiment, Wang teaches bonding stretched (to 300%) elastic (Lycra 740, which is polyurethane as recited in claims 16,42,43, and 64) strands between two layers of polypropylene non-woven fabric layers (Column 11, lines, 18-25). The adhesive may be sprayed, meltblown, or applied as a bead (Column 13, lines 54-56).

The composition of the hot-melt adhesive disclosed by Wang comprises a flexible polyolefin polymers (FPO), which is essentially a block copolymer of atactic and isotactic polypropylene (Column 2, lines 66-Column 3, line 10) and is commercially available from the Huntsman Corporation under the trade name of RexFlex®. Wang does disclose the melt flow rate range of RexFlex® as between 20g/10min to 200g/10 min (Column 6,lines 17-27), but does not disclose the molecular weights or crystallinities of each component. However, Wang discloses some commonly known properties of isotactic and atactic polypropylene. For example, Wang teaches conventional crystalline polypropylene are high molecular weight polymers with a predominantly isotactic chain structure (Column 2, lines 18-20) and that due to the highly ordered crystalline nature of isotactic polypropylene the degree of crystallinity is usually greater than 50% with a melt flow rate ranging from .5-200 g/10min (Column 2, lines 30-35 and lines 40-42). On the other hand amorphous or atactic polypropylene usually has a very low degree of

crystallinity with a heat of fusion of less than 10J/g (The weight percent of crystallinity can be determined by dividing the heat of fusion of the sample as received by the heat of fusion of 100% crystalline polypropylene- (assumed to be 209 joules/g)- Johnson et al., US 2002/0010265- Page 1, Section 0012). In addition, low molecular weight atactic or amorphous polypropylene is generally soft and have melt flow rate of 2000 g/10 min.

With regard to claims 5-7, 25-27 and 52-54 RexFlex® is known in the art as a relatively flexible polypropylene polymer that is at least about 20% atactic, more preferably at least about 25% atactic, even more preferably at least about 30% atactic. It is preferred, however, that the majority of the polymer structure is crystalline. Examples of such relatively flexible polypropylene polymers include: RexFlex FPO W101 (commercially available from Huntsman Chemical Corporation (KOLLAJA et al., US 2002/0098353 A1, Page 3, Sections 0028 and 0029).

With regard to claims 20, 34, and 61 Wang teaches that FPO polymers possess a combination of physical and mechanical properties such as low density, low melting point, flexibility, softness, and elasticity (Column 3, lines 11-13).

While Wang lacks an explicit teaching to the molecular weights, amounts of each polymer used in the blend, and the process temperature, the patent issued to Hall, Jr., et al teaches a hot-melt adhesive blend comprising isotactic and atactic polypropylene (Column 1, lines 46-50). The hot-melt adhesive composition is suitable to bond wood, paper, and textiles (Column 1, lines, 35-36). The hot-melt adhesive composition taught by Hall, Jr., et al. preferably comprises a solid atactic polypropylene (essentially non-crystalline) having a molecular weight in the range of 15,000-60,000 and represents from 75-95 percent of the composition (Column 1,

lines 57-69 and Column 2, lines 40-45). The isotactic (essentially crystalline) polypropylene component has a molecular weight ranging from 85,000 to 95,000 and represents from 5-25 percent of the composition (Column 2, lines 19-25 and lines 39-45). Hall, Jr., et al. teaches for application to a surface, the adhesive is heated to a temperature in the range of 250°F to 365°F (Column 2, lines 58-60).

Therefore, motivated to produce a hot-melt adhesive suitable for use in textile bonding applications, it would have been obvious to one having ordinary skill in the art to employ the hot-melt adhesive composition of Hall,Jr., et al. as the hot-melt composition taught by Wang.

With respect to the composition melt index limitations recited in claims 11-13,31-33 and 58-60, Wang teaches the melt-index properties associated with isotactic and atactic polymers and Hall, Jr., et al. discloses the claimed ratio of polymers. Therefore, it is presumable that the claimed melt-flow index would inherently be met by the composition of Hall, Jr., et al.

With respect to claims 71-76, the prior art happens to teach hot-melt adhesive compositions used in disposable absorbent personal care articles such as diapers, however, these use limitations are not given patentable weight at this time since the prior *meets* the structural and chemical limitations. In other words, as recited any absorbent article having the elements of claim 48 could function in any one of the capacities recited in claims 71-76 since there are no structural and/or chemical limitations set forth to prove otherwise.

7. Claims 17-19, 37-41,63 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang, US 6,329,468 in view of Hall, Jr., et al., US 3,370,106 as applied to claims 1, 21 and 48 above and further in view of Meece et al., US 2002/0039637.

The combined teachings of the prior art fails to teach an elastic component with the capability of stretching up to about 800%, however, the patent issued to Meece et al., teaches a non-woven web made from multipolymer filaments (Section 0015). The non-wovens may be carded, spun-bonded, wet laid, air laid, or melt-blown (Section 0043). The non-woven webs may be bonded with at least one layer of an elastomeric material to form a laminate (Section 0025). Meece et al., teaches the laminate is bonded with the application of hot-melt or suitable other adhesives (Section 0086). The elastomeric material may be selected from strands, scrims, and films (Section 0025). In addition the multipolymer blend used to form the fibers of the non-woven web may also include an elastic component (Section 0018). The laminates with elastomeric members are especially useful in disposable garments (Abstract).

With respect to claims 17-19, Meece et al., teaches that the extensible non-woven webs have extraordinary elongation of up to values of 700% and above (Section 0064).

With respect to claim 37, Meece et al., teaches an extensible web bonded to an elastomeric member selected from the group consisting of strands, scrims, or films.

With respect to claims 38-41, Meece et al., teaches that the fabric laminate is elastic in the cross direction (Section 0087) or if desired, the laminate could stretch in two directions when the elastomeric material is positioned between two non-woven webs (Section 0088 and 0086).

Therefore, motivated to produce an absorbent article with the desired extensibility in both the machine and cross directions, it would have been obvious to one having ordinary skill in the art to use the non-woven extensible webs and the elastomeric members taught by Meece et al., in the absorbent article of Wang.

8. Claims 37, 44, 63 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang, US 6,329,468 in view of Hall, Jr., et al., US 3,370,106 as applied to claims 21 and 48 above and further in view of Zafiroglu, US 5,468,320.

The combined teachings of the prior art do not expressly teach that the first and second substrates are each part of a single substrate, however, the patent issued to Zafiroglu teaches an elastic non-woven undergarment that comprises elastic strands incorporated into a deformable substrate (Column 3, lines 30-40). The deformable substrates include, non-woven sheets, lightly bonded spun-bonded sheets, or sheets of hydraulically entangled fibers (Column 3, lines 50-54). The elastic threads may be incorporated into the deformable sheet using conventional methods such as stitching, bonding or entangling. The undergarments taught by Zafiroglu may further comprise absorbent structures (Abstract). Additionally, figures 2 and 10 illustrate the use of two elastic non-woven sheets as recited in claims 37 and 63. Zafiroglu further discloses various attachment means such as heat or pressure activated adhesives, glues, or thermal bonding (Column 5, lines 1-7).

Therefore, motivated to provide a single substrate comprising elastomeric members for use in an absorbent disposable garment, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the substitute the substrate taught by Zafiroglu in the absorbent article of Wang.

### *Conclusion*

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynda M Salvatore whose telephone number is 703-305-4070. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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August 25, 2002



CHERYL A. JUSKA  
PRIMARY EXAMINER